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Title : HABITAT SELECTION MODELS AS A CONSERVATION TOOL: PROPOSAL OF MARINE PROTECTED AREAS FOR CETACEANS IN SOUTHERN SPAIN

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Abstract : Effective conservation and management of wild populations depends to a large extent on our ability to understand and predict relationships between those populations and their habitats. As part of a research project to identify the areas that should be designated as marine protected areas in Spanish Mediterranean waters, habitat selection models have been developed for 7 odontocete species (2,636 sightings) in southern Spain (common, striped, bottlenose and Risso's dolphins, long-finned pilot whales, sperm whales and beaked whales). This presentation focuses on common dolphins, although final results for the other 6 species are also shown. A total of 19,629 nmi were sailed on effort in the Strait of Gibraltar, Alboran Sea and Gulf of Vera. The habitat selection models, which are also an index of relative density, were applied in two steps: first presence/absence was modeled using GLMs taking into account availability of habitat types and secondly numbers given presence were modeled using a multiple linear model. The final prediction was obtained by combining the results of both models. The variables used in the models were: longitude, latitude, depth, slope, sea surface temperature (sst) and temporal variability of sst. Common dolphins showed preference for shallower and cooler waters, and were associated with some hydrological features of the Alboran Sea. Their preferred areas were south Almerfa, Málaga and the Strait of Gibraltar, with decreasing relative abundance northwards in the Gulf of Vera. Bottlenose dolphins preferred the area of southern Almerfa, the Strait of Gibraltar and the Island of Alboran. For the other species, the areas of most importance were the Strait of Gibraltar and the deep waters off south Almerfa. As a result, three SACs and one SPAMI have been proposed. Additionally, one oceanic area and two coastal areas have been proposed for some degree of protection.